
Safety Data Sheet

1. Chemical product and company identification

Product name : Barium hydroxide octahydrate

SDS code : E1-11

Company/undertaking identification :

HAYASHI PURE CHEMICAL IND.,LTD.

Address : 3-2-12 Uchihiranomachi, Chuo-ku, Osaka, Osaka, Japan

Telephone : 06-6910-7305

E-mail : shiyaku_kikaku@hpc-j.co.jp

URL : <https://www.hpc-j.co.jp/>

Emergency number : 06-6910-7305

Recommended use : For research and experimental use only.

Restrictions on use : Do not use on a human body or for animal medicines, foods, household products, cosmetics, etc.

2. Hazards identification

GHS classification

| | | | |
|--|--|-----------------------------|-----------------------------|
| Physical hazards | Explosives | No classification | |
| | Flammable gases | No classification | |
| | Aerosol | No classification | |
| | Oxidizing gases | No classification | |
| | Gases under pressure | No classification | |
| | Flammable liquids | No classification | |
| | Flammable solids | No classification | |
| | Self-reactive substances and mixtures | No classification | |
| | Pyrophoric liquids | No classification | |
| | Pyrophoric solids | No classification | |
| | Self-heating substances and mixtures | No classification | |
| | Substances and mixtures which in contact with water emit flammable gases | No classification | |
| | Oxidizing liquids | No classification | |
| | Oxidizing solids | classification not possible | |
| | Organic peroxides | No classification | |
| | Corrosive to metals | classification not possible | |
| | Desensitized explosives | classification not possible | |
| | Health hazards | Acute toxicity (oral) | Category 4 |
| | | Acute toxicity (dermal) | classification not possible |
| Acute toxicity (inhalation:gas) | | No classification | |
| Acute toxicity (inhalation:vapors) | | classification not possible | |
| Acute toxicity (inhalation:dust/mist) | | classification not possible | |
| Skin corrosion/irritation | | Category 1 | |
| Serious eye damage/eye irritation | | Category 1 | |
| Respiratory sensitization | | classification not possible | |
| Skin sensitization | | classification not possible | |
| Germ cell mutagenicity | | classification not possible | |
| Carcinogenicity | classification not possible | | |
| Reproductive toxicity | classification not possible | | |
| Specific target organ toxicity (single exposure) | Category 2 (systemic toxicity) | | |

| | | |
|-----------------------|---|-----------------------------|
| Environmental hazards | Specific target organ toxicity (repeated exposure) | classification not possible |
| | Aspiration hazard | classification not possible |
| | Hazardous to the aquatic environment, short-term (acute) | classification not possible |
| | Hazardous to the aquatic environment, long-term (chronic) | classification not possible |
| | Hazardous to the ozone layer | classification not possible |

Hazard pictograms (GHS JP)



GHS05



GHS07



GHS08

| | |
|-----------------------------------|---|
| Signal word (GHS JP) | : Danger |
| Hazard statements (GHS JP) | : Harmful if swallowed (H302) Causes severe skin burns and eye damage (H314) May cause damage to organs (systemic toxicity) (H371) |
| Precautionary statements (GHS JP) | |
| Prevention | : Do not breathe dust/fume/gas/mist/vapors/spray. (P260) Wash hands, forearms and face thoroughly after handling. (P264) Do not eat, drink or smoke when using this product. (P270) Wear protective gloves/protective clothing/eye protection/face protection. (P280) |
| Response | : IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell. (P301+P312) IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. (P301+P330+P331) IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. (P303+P361+P353) IF INHALED: Remove person to fresh air and keep comfortable for breathing (P304+P340) IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. (P305+P351+P338) IF exposed or concerned: Call a POISON CENTER or doctor. (P308+P311) Immediately call a POISON CENTER or doctor. (P310) Wash contaminated clothing before reuse. (P363) |
| Storage | : Store locked up. (P405) |
| Disposal | : Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation. (P501) |

3. Composition/information on ingredients

Distinction of substance or mixture : Substance

| Name | Concentration or Concentration range | Formula | Kanpo number | | CAS RN |
|------------------------------|--------------------------------------|--|--------------|-----------------------------|------------|
| | | | CSCL no | ISHL no | |
| Barium hydroxide octahydrate | ≥98.0%, ≤100% | Ba(OH) ₂ ·8H ₂ O | (1)-83 | Existing Chemical Substance | 12230-71-6 |

The above concentration or concentration range are not product specification.

All percentages listed in the above concentration or concentration range are wt%, unless otherwise specified.

4. First aid measures

First aid measures

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.
Get immediate medical advice/attention.

- First-aid measures after skin contact : Remove/Take off immediately all contaminated clothing.
Gently wash with plenty of soap and water.
Get immediate medical advice/attention.
- First-aid measures after eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Get immediate medical advice/attention.
- First-aid measures after ingestion : Rinse mouth.
Get immediate medical advice/attention.

5. Fire fighting measures

- Suitable extinguishing media : Water spray, Alcohol-resistant foam, Dry powder, Carbon dioxide, Sand.
- Unsuitable extinguishing media : Do not use a heavy water stream.
- Fire hazard : This product is unburnable.
- Explosion hazard : May induce explosion of containers by heating.
- Hazardous decomposition products in case of fire : In case of fire, product may produce irritative or toxic fumes/gases.
- Firefighting instructions : If ignited, for the initial fire-fighting, cut off combustion sources, extinguish fire at a stroke using appropriate fire-extinguishers.
In the case of peripheral fire, quickly remove movable containers to safe places.
If unable to be moved containers, sprinkle water to containers and surrounding equipment, etc. to cool.
Avoid (reject) fire-fighting water to enter environment.
Even after extinguishing fire, thoroughly cool containers by using plenty of water.
- Protection during firefighting : Wear appropriate fire-resistant clothing including self contained-compressed air breathing apparatus.

6. Accidental release measures

Personal Precautions, Protective Equipment and Emergency Procedures

- General measures : Before entering, ventilate the area.
Do not let unauthorized persons come close to the area.
Immediately place the leakage area in isolation, with taking proper distances for all directions.
Wear appropriate personal protective devices to prevent inhalation and contact with eye, skin, and clothing, and never attempt to work on the lee.

Environmental precautions

- Environmental precautions : Avoid release to the environment.
Prevent entry to sewers and public waters.

Methods and Equipment for Containment and Cleaning up

- Methods for cleaning up : Take care not to generate dust, sweep it up as much as possible, collect it in an empty container that can be sealed, and move it to a safe place.
Wash out the spilled area with large amounts of water.

7. Handling and storage

Handling

- Technical measures : Work with appropriate personal protective equipment to prevent inhalation or contact to eyes, skin, and clothing.
Handle with care to prevent leakage, overflowing, or scattering, minimize generation of mist or vapor, and thoroughly ventilate.
- Precautions for safe handling : Do not eat, drink or smoke when using this product.
Thoroughly wash your hands and gargle after handling.
Ensure good ventilation of the work station.
Do not contact, breathe or swallow.
- Prevents handling of incompatible substances or mixtures : Avoid prolonged or repeated exposure.

Storage

| | | |
|---------------------------------------|---|--|
| Storage conditions | : | Store locked up. Store in a well-ventilated place, away from direct sunlight. Keep container tightly closed and keep away from fire and heat sources. |
| Material used in packaging/containers | : | Airtight container. |
| Technical measures | : | Comply with applicable regulations. |
| Storage temperature | : | Cool and dark place |

8. Exposure controls / Personal protection equipment

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| Appropriate engineering controls | : | Cover up tightly the generation source at the handling place or install local exhaust equipment or overall ventilation equipment. Install safety showers and eye-fountains near a handling place. Clearly indicate the location. |
|----------------------------------|---|--|

Protective equipment

| | | |
|--------------------------|---|--|
| Respiratory protection | : | Dustproof mask |
| Hand protection | : | Impervious protective gloves |
| Eye protection | : | Protective glasses (general glasses, glasses with side-shields, goggles) |
| Skin and body protection | : | Impervious aprons, Impervious work clothing, Impervious long boots |

9. Physical and chemical properties

| | | |
|---|---|---|
| Physical state | : | Solid |
| Appearance | : | Crystals |
| Color | : | white |
| Odor | : | Odorless |
| pH | : | No data available |
| Melting point | : | 78 °C |
| Freezing point | : | No data available |
| Boiling point | : | 95 °C |
| Flash point | : | No data available |
| Auto-ignition temperature | : | No data available |
| Decomposition temperature | : | No data available |
| Flammability | : | No data available |
| Vapor pressure | : | No data available |
| Relative density | : | No data available |
| Density | : | 2.18 g/cm ³ |
| Relative gas density | : | No data available |
| Solubility | : | Soluble in water. Insoluble in ethanol. |
| Partition coefficient n-octanol/water (Log Pow) | : | No data available |
| Explosive limits (vol %) | : | No data available |
| Viscosity, kinematic | : | No data available |
| Particle characteristics | : | No data available |

10. Stability and reactivity

| | | |
|------------------------------------|---|--|
| Reactivity | : | No data available |
| Chemical stability | : | Stable under normal handling conditions. It absorbs carbon dioxide in the air and easily becomes barium carbonate. Crystallization water is liberated at 78°C to become an aqueous solution. |
| Possibility of hazardous reactions | : | May react with oxidizing agents. |
| Conditions to avoid | : | Sunlight, heat, moisture. Contact with oxidizing agents and metals such as aluminium, tin and zinc. |
| Incompatible materials | : | Oxidizing agents, Metals |
| Hazardous decomposition products | : | Barium oxide |

11. Toxicological information

The information in this section is based on the "GHS Classification Results" by NITE.

| Barium hydroxide octahydrate | |
|---------------------------------------|-----------------------------|
| Acute toxicity (oral) | Category 4 |
| Acute toxicity (dermal) | classification not possible |
| Acute toxicity (gas) | No classification |
| Acute toxicity (vapour) | classification not possible |
| Acute toxicity (inhalation:dust/mist) | classification not possible |
| Skin corrosion/irritation | Category 1 |
| Serious eye damage/irritation | Category 1 |
| Respiratory sensitization | classification not possible |
| Skin sensitization | classification not possible |
| Germ cell mutagenicity | classification not possible |
| Carcinogenicity | classification not possible |
| Reproductive toxicity | classification not possible |
| STOT-single exposure | Category 2 |
| STOT-repeated exposure | classification not possible |
| Aspiration hazard | classification not possible |

12. Ecological information

The information in this section is based on the "GHS Classification Results" by NITE.

| Barium hydroxide octahydrate | |
|---|-----------------------------|
| Hazardous to Aquatic Environment - Acute Hazard | classification not possible |
| Hazardous to Aquatic Environment - Chronic Hazard | classification not possible |
| Persistence and degradability | No data available |
| Bioaccumulative potential | No data available |
| Mobility in soil | No data available |
| Hazardous to the ozone layer | No data available |

13. Disposal considerations

- Ecology - waste materials : With the detail information of the waste, subcontract its disposal to a waste disposer authorized by a Prefectural Governor.
- Contaminated container and packaging : Empty the packaging completely prior to disposal.
Empty containers should be taken for recycle, recovery or waste in accordance with local regulation.

14. Transport information

International Regulations

Transport by sea(IMDG)

| | |
|-----------------------------------|---------------------------|
| UN-No. (IMDG) | : 1564 |
| Proper Shipping Name (IMDG) | : BARIUM COMPOUND, N.O.S. |
| Packing group (IMDG) | : III |
| Transport hazard class(es) (IMDG) | : 6.1 |
| Hazard labels (IMDG) | : 6.1 |
| Class (IMDG) | : 6.1 |
| Division (IMDG) | : 6.1 |
| Special provision (IMDG) | : 177, 223, 274 |
| Limited quantities (IMDG) | : 5 kg |
| Excepted quantities (IMDG) | : E1 |
| Packing instructions (IMDG) | : P002, LP02 |
| IBC packing instructions (IMDG) | : IBC08 |
| IBC special provisions (IMDG) | : B3 |
| Tank instructions (IMDG) | : T1 |
| Tank special provisions (IMDG) | : TP33 |
| Stowage category (IMDG) | : A |

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| Properties and observations (IMDG) | : White powder, lumps or crystals. Toxic if swallowed, by skin contact or by inhalation. |
| MFAG-No | : 154 |
| Air transport(IATA) | |
| UN-No. (IATA) | : 1564 |
| Proper Shipping Name (IATA) | : Barium compound, n.o.s. |
| Packing group (IATA) | : III |
| Transport hazard class(es) (IATA) | : 6.1 |
| Hazard labels (IATA) | : 6.1 |
| Class (IATA) | : 6.1 |
| Division (IATA) | : 6.1 |
| PCA Excepted quantities (IATA) | : E1 |
| PCA Limited quantities (IATA) | : Y645 |
| PCA limited quantity max net quantity (IATA) | : 10kg |
| PCA packing instructions (IATA) | : 670 |
| PCA max net quantity (IATA) | : 100kg |
| CAO packing instructions (IATA) | : 677 |
| CAO max net quantity (IATA) | : 200kg |
| Special provision (IATA) | : A3, A82 |
| ERG code (IATA) | : 6L |
| Marine pollutant | : Not applicable |
| Regulations in Japan | |
| Regulatory information by sea | : Conform to the provisions of the Ship Safety Law. |
| Regulatory information by air | : Conform to the provisions of the Civil Aeronautics Law. |
| MFAG-No | : 154 |
| Special transport precautions | : When transporting, load containers so that they do not tip over, damage, drop or collapse. Make sure there is no leak in containers. |

15. Regulatory information

National law

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| Industrial Safety and Health Law | : Harmful Substances Whose Names Are to be Indicated on the Label (Law Art.57, Para.1, Enforcement Order Art.18) Dangerous or Harmful Substances for Notification of Chemical Name etc. on SDS (Law Art.57-2, Enforcement Order Art.18-2) Barium and its soluble compounds Chemical substances that damage the skin, etc. Harmful substances that cause skin irritation (Ordinance on Industrial Safety and Health, Article 594-2, Para.1, list of substances applicable to No. 0704 Item 1, 5 based on July 4, 2023) |
| Japanese Poisonous and Deleterious Substances Control Law | : Deleterious Substances (Designated Order Art.2) Barium compounds. (except for the following substances; i)barium 4-(5-chloro-4-methyl-2-sulfonatophenylazo)-3-hydroxy-2-naphthoate, ii)barium sulfate) |
| Fire Service Law | : Designation of Materials Requiring Notification (Law Art.9-3, Cabinet Order on Hazardous Materials Art.1-10 Para 6, Attached Table No.2-18, Ordinance No. 2 of 1988, Art.2) |
| Foreign Exchange and Foreign Trade Control Act | : Export Trade Control Ordinance appendix 1-16 |
| Ship Safety Act | : Toxic and infectious substances/Toxic substances (Dangerous Goods Notification Schedule first second and third Article Dangerous Goods Regulations) |
| Civil Aeronautics Law | : Toxic and infectious substances/Toxic substances (Hazardous materials notice Appended Table 1 Article 194 of the Enforcement Regulations) |
| Port Regulation Law | : Toxic and infectious substances/Toxic substances (Article 21, Paragraph 2 of Law, Article 12 rule, notice attached table that defines the type of dangerous goods) |
| Japanese Pollutant Release and Transfer Register Law (PRTR Law) | : Not applicable |

16. Other information

- Data sources : Handbook of 17524 Chemical Products, The Chemical Daily Co, Ltd.
International Chemical Safety Cards.
National Institute of Technology and Evaluation (NITE).
2020 Emergency Response Guidebook (ERG 2020).
- Other information : The SDS is copyrighted material of Hayashi Pure Chemical Ind, Ltd.
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